

IN THE EUROPEAN PATENT OFFICE
BEFORE THE INTERNATIONAL SEARCHING AUTHORITY

At Docket No: DE1142

In re International Application: XIAO, XIAO

International Application No.: Unassigned

International Filing Date: Concurrently Herewith

For: DNA SEQUENCE ENCODING A DYSTROPHY MINIGENE AND USE THEREOF

European Patent Office
Storage and Retrieval of Amino
Acid and Nucleotide Data
Room POH09
Patentlaan 2
P.B. 5818
NL-2280 HV Rijswijk
The Netherlands

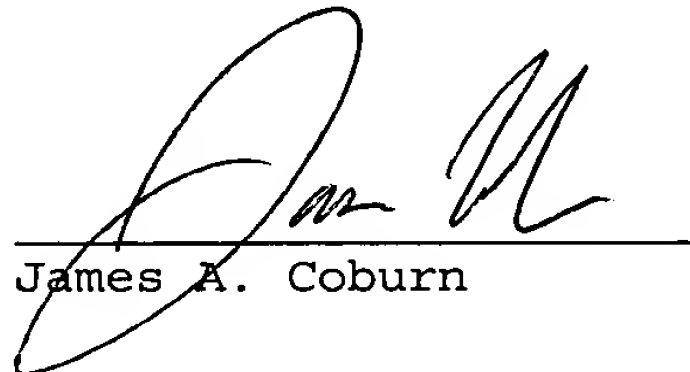
STATEMENT ACCOMPANYING SEQUENCE LISTING

Dear Sir:

The undersigned hereby states that the Sequence Listing submitted concurrently herewith does not include matter which goes beyond the content of the application as filed and that the information recorded on the diskette submitted concurrently herewith is identical to the written Sequence Listing.

Respectfully submitted,

April 25, 2001
Date


James A. Coburn

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Intellectual Property Services
1500A Lafayette Road
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Portsmouth, N.H.
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<151> 2000-04-28

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<170> PatentIn Ver. 2.1

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<212> DNA

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| aagaaaacat | tcacaaaatg | ggtaaatgca | caattttcta | agtttgaggaa | gcagcatatt | 120 |
| gagaacctct | tcagtgcact | acaggatggg | aggcgcctcc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
| aacaaggcac | tgcgggtttt | gcagaacaat | aatgttgatt | tagtgaatat | tggaaagtact | 300 |
| gacatcgtag | atggaaatca | taaactgact | cttggtttga | tttggaatat | aatcctccac | 360 |
| tggcagggtca | aaaatgtaat | gaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacaggt | taatgtaatc | 480 |
| aacttcacca | ccagctggtc | tgatggcctg | gctttgaatg | ctctcatcca | tagtcatagg | 540 |
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| catgcattca | acatcgccag | atatcaatta | ggcatagaga | aactactcga | tcctgaagat | 660 |
| gttgatacca | cctatccaga | taagaagtcc | atcttaatgt | acatcacatc | actcttccaa | 720 |
| gttttgcttc | aacaagtgag | cattgaagcc | atccaggaag | tggaaatgtt | gccaaaggcca | 780 |
| cctaaagtga | ctaaagaaga | acatthttcag | ttacatcatc | aaatgcacta | ttctcaacag | 840 |

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| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
| ccttcacagc | atgttgaagc | tcctgaagac | aagtcatttg | gcagttcatt | gatggagagt | 1020 |
| gaagtaaacc | tggaccgtta | tcaaacagct | ttagaagaag | tattatcgtg | gcttctttct | 1080 |
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| tcaagtcttc | aaaaactggc | cgttttataa | gcggatctag | aaaagaaaaa | gcaatccatg | 1860 |
| ggcaaactgt | attcactcaa | acaagatctt | ctttcaacac | tgaagaataa | gtcagtgacc | 1920 |
| cagaagacgg | aagcatggct | ggataacttt | gcccgggtgt | gggataattt | agtccaaaaa | 1980 |
| cttgaaaaga | gtacagcaca | gactcataga | ttactgcaac | agttccccct | ggacctggaa | 2040 |
| aagtttcttg | cctggcttac | agaagctgaa | acaactgcca | atgtcctaca | ggatgctacc | 2100 |
| cgtaaggaaa | ggctcctaga | agactccaag | ggagtaaaag | agctgatgaa | acaatggcaa | 2160 |
| gacctccaag | gtgaaattga | agctcacaca | gatgtttatc | acaacctgga | tgaaaacagc | 2220 |
| caaaaaatcc | tgagatccct | ggaagggtcc | gatgatgcag | tcctgttaca | aagacgtttg | 2280 |
| gataacatga | acttcaagtg | gagtgaactt | cggaaaaagt | ctctcaacat | taggtcccat | 2340 |
| ttggaagcca | gttctgacca | gtggaagcgt | ctgcaccttt | ctctgcagga | acttctgggtg | 2400 |
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| ccctggggaga | gagccatctc | gccaacaaca | gtgccctact | atatcaacca | cgagactcaa | 3180 |
| acaacttgct | gggacctacc | caaaatgaca | gagctctacc | agtcttttagc | tgacctgaat | 3240 |
| aatgtcagat | tctcagctta | taggactgcc | atgaaactcc | gaagactgca | gaaggccctt | 3300 |
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| caaaatgacc | agcccatgga | tatcctgcag | attattaatt | gtttgaccac | tatttatgac | 3420 |
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| tttcgaacca | aaaggtatgt | tgcaagcat | ccccgaatgg | gctacctgcc | agtgcagact | 4140 |
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 <212> DNA
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| ttcacaaaat | gggtaaatgc | acaattttct | aagttttgga | agcagcatat | tgagaacctc | 120 |
| ttcagtgacc | tacaggatgg | gaggcgctc | ctagacctcc | tcgaaggcct | gacagggcaa | 180 |
| aaactgccaa | aagaaaaagg | atccacaaga | gttcatgccc | tgaacaatgt | caacaaggca | 240 |
| ctgcggggtt | tgcagaacaa | taatgttgat | ttagtgaata | ttggaagtac | tgacatcgta | 300 |
| gatggaaatc | ataaactgac | tcttggtttg | atttgggaata | taatcctcca | ctggcagggtc | 360 |
| aaaaatgtaa | tgaaaaatat | catggctgga | ttgcaaccaa | ccaacagtga | aaagattctc | 420 |
| ctgagctggg | tccgacaatc | aactcgtaat | tatccacagg | ttaatgtaat | caacttcacc | 480 |
| accagctggg | ctgatggcct | ggctttgaat | gctctcatcc | atagtcatag | gccagaccta | 540 |
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| aacatcgcca | gatatacaatt | aggcatagag | aaactactcg | atcctgaaga | tgttgatacc | 660 |
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| tacacacagg | ctgcttatgt | caccacctct | gaccctacac | ggagcccatt | tccttcacag | 960 |
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| caattgggaa | gtaagctgat | tggaacagga | aaattatcag | aagatgaaga | aactgaagta | 1260 |
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| aaacaaagca | atttacatag | agttttaatg | gatctccaga | atcagaaact | gaaagagttg | 1380 |
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| caaaaactgg | ccgtttttaa | agcggatcta | gaaaagaaaa | agcaatccat | gggcaaactg | 1860 |
| tattcaatca | aacaagatct | tctttcaaca | ctgaagaata | agtcagtgc | ccagaagacg | 1920 |
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<400> 4

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| agaagctgaa | acaactgcca | atgtcctaca | ggatgctacc | cgtaaggaaa | ggctcctaga | 120 |
| agactccaag | ggagtaaaag | agctgatgaa | acaatggcaa | gacctccaag | gtgaaattga | 180 |
| agctcacaca | gatgtttatc | acaacctgga | tgaaaacagc | caaaaaatcc | tgagatccct | 240 |
| ggaagggttc | gatgatgcag | tcctgttaca | aagacgtttg | gataacatga | acttcaagtg | 300 |
| gagtgaactt | cggaaaaagt | ctctcaacat | taggtcccat | ttggaagcca | gttctgacca | 360 |
| gtggaagcgt | ctgcaccttt | ctctgcagga | acttctggtg | tggtacagc | tgaaagatga | 420 |
| tgaattaagc | cggcaggcac | ctattggagg | cgactttcca | gcagttcaga | agcagaacga | 480 |
| tgtacatagg | gccttcaaga | gggaattgaa | aactaaagaa | cctgtaatca | tgagtactct | 540 |
| tgagactgta | cgaatatttc | tgacagagca | gcctttggaa | ggactagaga | aactctacca | 600 |

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| ggagcccaga | gagctgcctc | ctgaggagag | agcccagaat | gtcactcggc | ttctacgaaa | 660 |
| gcaggctgag | gaggtcaata | ctgagtggga | aaaattgaac | ctgcactccg | ctgactggca | 720 |
| gagaaaaata | gatgagaccc | ttgaaagact | ccaggaactt | caagaggcca | cggatgagct | 780 |
| ggacctcaag | ctgcgcccaag | ctgaggtgat | caagggatcc | tggcagcccg | tgggcgatct | 840 |
| cctcattgac | tctctccaag | atcacctcga | gaaagtcaag | gcacttcgag | gagaaattgc | 900 |
| gcctctgaaa | gagaacgtga | gccacgtcaa | tgaccttgct | cgccagctta | ccactttggg | 960 |
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| caaaatgaca | gagctctacc | agtcttttagc | tgacctgaat | aatgtcagat | tctcagctta | 1260 |
| taggactgcc | atgaaactcc | gaagactgca | gaaggccctt | tgcttggtac | tcttgagcct | 1320 |
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| actggaaccc | cagtccatgg | tgtggctgcc | cgtcctgcac | agagtggctg | ctgcagaaac | 1860 |
| tgccaagcat | caggccaaat | gtaacatctg | caaagagtgt | ccaatcattg | gattcaggta | 1920 |
| caggagtcta | aagcacttta | attatgacat | ctgccaaagc | tgcttttttt | ctggtcgagt | 1980 |
| tgcaaaaaggc | cataaaatgc | actatcccat | ggtggaatat | tgactccga | ctacatcagg | 2040 |
| agaagatggt | cgagactttg | ccaaggtact | aaaaaacaaa | tttcgaacca | aaaggtattt | 2100 |
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<400> 5
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<210> 6
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| gagaacctct | tcagtgcctt | acaggatggg | aggcgcctcc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
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| gacatcgtag | atggaaatca | taaactgact | cttggtttga | tttgggaatat | aatcctccac | 360 |
| tggcagggtca | aaaatgtaat | gaaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacaggt | taatgtaatc | 480 |
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| gttttgcctc | aacaagtgag | cattgaagcc | atccaggaag | tggaaatggt | gccaaggcca | 780 |
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| | | | | | | |
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| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
| ccttcacagc | atttggaagc | tcctgaagac | aagtcatttg | gcagttcatt | gatggagagt | 1020 |
| gaagtaaacc | tggaccgtta | tcaaacagct | ttagaagaag | tattatcgtg | gcttctttct | 1080 |
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| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 1260 |
| actgaagtac | aagagcagat | gaatctccta | aattcaagat | gggaatgcct | cagggtagct | 1320 |
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| aaagagttga | atgactggct | aacaaaaaca | gaagaaagaa | caaggaaaat | ggaggaagag | 1440 |
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| gatgaatcta | gtggagatca | cgcaactgct | gctttggaag | aacaacttaa | ggtattggga | 1620 |
| gatcgatggg | caaacatctg | tagatggaca | gaagaccgct | gggttctttt | acaagaccag | 1680 |
| cctgacctag | ctcctggact | gaccactatt | ggagcctctc | ctactcagac | tgttactctg | 1740 |
| gtgacacaac | ctgtgggttac | taaggaaact | gccatctcca | aactagaaat | gccatcttcc | 1800 |
| ttgatgttgg | aggtacctac | tcatagatta | ctgcaacagt | tccccctgga | cctggaaaag | 1860 |
| tttcttgect | ggcttacaga | agctgaaaca | actgccaatg | tcctacagga | tgctaccctg | 1920 |
| aaggaaaggc | tcctagaaga | ctccaaggga | gtaaaagagc | tgatgaaaca | atggcaagac | 1980 |
| ctccaagggtg | aaattgaagc | tcacacagat | gtttatcaca | acctggatga | aaacagccaa | 2040 |
| aaaatcctga | gatccctgga | aggttccgat | gatgcagtc | tggtacaaag | acgtttggat | 2100 |
| aacatgaact | tcaagtggag | tgaacttcgg | aaaaagtctc | tcaacattag | gtcccatctg | 2160 |
| gaagccagtt | ctgaccagt | gaagcgtctg | cacctttctc | tgaggaact | tctggtgtgg | 2220 |
| ctacagctga | aagatgatga | attaagccgg | caggcaccta | ttggaggcga | ctttccagca | 2280 |
| gttcagaagc | agaacgatgt | acatagggcc | ttcaagaggg | aattgaaaac | taaagaacct | 2340 |
| gtaatcatga | gtactcttga | gactgtacga | atatttctga | cagagcagcc | tttggaagga | 2400 |
| ctagagaaac | tctaccagga | gcccagagag | ctgcctcctg | aggagagagc | ccagaatgtc | 2460 |
| actcggcttc | tacgaaagca | ggctgaggag | gtcaatactg | agtgggaaaa | attgaacctg | 2520 |
| cactccgctg | actggcagag | aaaaatagat | gagacccttg | aaagactcca | ggaacttcaa | 2580 |
| gaggccacgg | atgagctgga | cctcaagctg | cgccaagctg | aggtgatcaa | gggatcctgg | 2640 |
| cagcccgtgg | gcgatctcct | cattgactct | ctccaagatc | acctcgagaa | agtcaaggca | 2700 |
| cttcgaggag | aaattgcgcc | tctgaaagag | aacgtgagcc | acgtcaatga | ccttgctcgc | 2760 |
| cagcttacca | ctttgggcat | tcagctctca | ccgtataacc | tcagcactct | ggaagacctg | 2820 |
| aacaccagat | ggaagcttct | gcaggtggcc | gtcgaggacc | gagtcaggca | gctgcatgaa | 2880 |
| gcccacaggg | actttggtcc | agcatctcag | cactttcttt | ccacgtctgt | ccaggggtccc | 2940 |
| tgggagagag | ccatctcgcc | aaacaaagt | ccctactata | tcaaccacga | gactcaaaca | 3000 |
| acttgctggg | accatcccaa | aatgacagag | ctctaccagt | ctttagctga | cctgaataat | 3060 |
| gtcagattct | cagcttatag | gactgccatg | aaactccgaa | gactgcagaa | ggccctttgc | 3120 |
| ttggatctct | tgagcctgtc | agctgcatgt | gatgccttgg | accagcacia | cctcaagcaa | 3180 |
| aatgaccagc | ccatggatat | cctgcagatt | attaattgtt | tgaccactat | ttatgaccgc | 3240 |
| ctggagcaag | agcacaacaa | tttgggtcaac | gtccctctct | gcgtggatat | gtgtctgaac | 3300 |
| tggctgctga | atgtttatga | tacgggacga | acaggggagga | tccgtgtcct | gtcttttaaa | 3360 |
| actggcatca | tttccctgtg | taaagcacat | ttggaagaca | agtacagata | ccttttcaag | 3420 |
| caagtggcaa | gttcaacagg | atthtgtgac | cagcgcaggc | tgggcctcct | tctgcatgat | 3480 |
| tctatccaaa | ttccaagaca | gttgggtgaa | gttgcatact | ttgggggag | taacattgag | 3540 |
| ccaagtgtcc | ggagctgctt | ccaatttgct | aataataagc | cagagatcga | agcggccctc | 3600 |
| ttcctagact | ggatgagact | ggaaccccag | tccatgggtg | ggctgcccg | cctgcacaga | 3660 |
| gtggctgctg | cagaaactgc | caagcatcag | gccaaatgta | acatctgcaa | agagtgtcca | 3720 |
| atcattggat | tcaggtacag | gagtctaaag | cactttaatt | atgacatctg | ccaaagctgc | 3780 |
| tttttttctg | gtcgagttgc | aaaaggccat | aaaatgcact | atcccatggg | ggaatattgc | 3840 |
| actccgacta | catcaggaga | agatgttcga | gactttgcca | aggtactaaa | aaacaaattt | 3900 |
| cgaacaaaaa | ggtattttgc | gaagcatccc | cgaatgggct | acctgccagt | gcagactgtc | 3960 |
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<210> 7
 <211> 1667
 <212> DNA

<213> Homo sapiens

<400> 7

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| ttcacaaaat | gggtaaatgc | acaattttct | aagtttgga | agcagcatat | tgagaacctc | 120 |
| ttcagtgacc | tacaggatgg | gaggcgctc | ctagacctcc | tgaaggcct | gacagggcaa | 180 |
| aaactgccaa | aagaaaaagg | atccacaaga | gttcatgccc | tgaacaatgt | caacaaggca | 240 |
| ctgcgggttt | tgcagaacaa | taatgttgat | ttagtgaata | ttggaagtac | tgacatcgta | 300 |
| gatggaaatc | ataaactgac | tcttggtttg | atttggaata | taatcctcca | ctggcaggtc | 360 |
| aaaaatgtaa | tgaaaaatat | catggctgga | ttgcaaccaa | ccaacagtga | aaagattctc | 420 |
| ctgagctggg | tccgacaatc | aactcgtaat | tatccacagg | ttaatgtaat | caacttcacc | 480 |
| accagctggg | ctgatggcct | ggctttgaat | gctctcatcc | atagtcatag | gccagacctc | 540 |
| tttgactgga | atagtgtggt | ttgccagcag | tcagccacac | aacgactgga | acatgcattc | 600 |
| aacatcgcca | gatatcaatt | aggcatagag | aaactactcg | atcctgaaga | tggtgatacc | 660 |
| acctatccag | ataagaagtc | catcttaatg | tacatcacat | cactcttcca | agttttgcct | 720 |
| caacaagtga | gcattgaagc | catccaggaa | gtggaaatgt | tgccaaggcc | acctaaagtg | 780 |
| actaaagaag | aacattttca | gttacatcat | caaatgcact | attctcaaca | gatcacggtc | 840 |
| agtctagcac | agggatatga | gagaacttct | tcccctaagc | ctcgattcaa | gagctatgcc | 900 |
| tacacacagg | ctgcttatgt | caccacctct | gacctacac | ggagcccat | tccttcacag | 960 |
| catttggaag | ctcctgaaga | caagtcattt | ggcagttcat | tgatggagag | tgaagtaaac | 1020 |
| ctggaccgtt | atcaaacagc | tttagaagaa | gtattatcgt | ggcttctttc | tgctgaggac | 1080 |
| acattgcaag | cacaaggaga | gatttcta | gatgtggaag | tggtgaaaga | ccagtttcat | 1140 |
| actcatgagg | ggtacatgat | ggatttgaca | gcccacagg | gccgggttg | taatattcta | 1200 |
| caattgggaa | gtaagctgat | tggaacagga | aaattatcag | aagatgaaga | aactgaagta | 1260 |
| caagagcaga | tgaatctcct | aaattcaaga | tgggaatgcc | tcagggtagc | tagcatggaa | 1320 |
| aaacaaagca | atttacatag | agttttaatg | gatctccaga | atcagaaact | gaaagagttg | 1380 |
| aatgactggc | taacaaaaac | agaagaaaga | acaaggaaaa | tggaggaaga | gcctcttgga | 1440 |
| cctgatcttg | aagacctaaa | acgccaaagta | caacaacata | aggtgcttca | agaagatcta | 1500 |
| gaacaagaac | aagtcagggt | caattctctc | actcacatgg | tggtggtagt | tgatgaatct | 1560 |
| agtggagatc | acgcaactgc | tgctttggaa | gaacaactta | aggtattggg | agatcgatgg | 1620 |
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<210> 8

<211> 147

<212> DNA

<213> Homo sapiens

<400> 8

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| tgttactctg | gtgacacaac | ctgtgggttac | taaggaaact | gccatctcca | aactagaaat | 120 |
| gccatcttcc | ttgatggttg | aggtacc | | | | 147 |

<210> 9

<211> 3858

<212> DNA

<213> Homo sapiens

<400> 9

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| aagaaaacat | tcacaaaatg | ggtaaagtca | caattttcta | agtttgaggaa | gcagcatatt | 120 |
| gagaacctct | tcagtgcact | acaggatggg | aggcgctcc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
| aacaaggcac | tgcggtttt | gcagaacaat | aatgttgatt | tagtgaatat | tggaagtact | 300 |
| gacatcgtag | atggaaatca | taaactgact | cttggtttga | tttggaaatat | aatcctccac | 360 |
| tggcaggcca | aaaatgtaat | gaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacaggt | taatgtaatc | 480 |

| | | | | | | |
|-------------|-------------|-------------|-------------|------------|------------|------|
| aacttcacca | ccagctggtc | tgatggcctg | gctttgaatg | ctctcatcca | tagtcatagg | 540 |
| ccagacctat | ttgactggaa | tagtgtggtt | tgccagcagt | cagccacaca | acgactggaa | 600 |
| catgcattca | acatcgccag | atatcaatta | ggcatagaga | aactactcga | tcctgaagat | 660 |
| gttgatacca | cctatccaga | taagaagtcc | atcttaatgt | acatcacatc | actcttccaa | 720 |
| gttttgcctc | aacaagtgag | cattgaagcc | atccaggaag | tggaaatgtt | gccaaggcca | 780 |
| cctaaagtga | ctaaagaaga | acattttcag | ttacatcatc | aatgcacta | ttctcaacag | 840 |
| atcacggtca | gtctagcaca | gggatatgag | agaacttctt | cccctaagcc | tcgattcaag | 900 |
| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
| ccttcacagc | at ttggaagc | tcctgaagac | aagtcatttg | gcagttcatt | gatggagagt | 1020 |
| gaagtaaacc | tggaccgtta | tcaaacagct | ttagaagaag | tattatcgtg | gcttctttct | 1080 |
| gctgaggaca | cattgcaagc | acaaggagag | at ttctaatg | atgtggaagt | ggtgaaagac | 1140 |
| cagtttcata | ctcatgaggg | gtacatgatg | gatttgacag | cccatcaggg | ccgggttggt | 1200 |
| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 1260 |
| actgaagtac | aagagcagat | gaatctccta | aattcaagat | gggaatgcct | cagggtagct | 1320 |
| agcatggaaa | aacaaagcaa | tttacataga | gttttaatgg | atctccagaa | tcagaaactg | 1380 |
| aaagagttga | atgactggct | aacaaaaaca | gaagaaagaa | caaggaaaat | ggaggaagag | 1440 |
| cctcttggac | ctgatcttga | agacctaaaa | cgccaagtac | aacaacataa | ggtgcttcaa | 1500 |
| gaagatctag | aacaagaaca | agtcagggtc | aattctctca | ctcacatggg | ggtggtagtt | 1560 |
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| gatcgatggg | caaacatctg | tagatggaca | gaagaccgct | gggttctttt | acaagacact | 1680 |
| catagattac | tgcaacagtt | ccccctggac | ctggaaaagt | ttcttgcttg | gcttacagaa | 1740 |
| gctgaaacaa | ctgccaatgt | cctacaggat | gctacccgta | aggaaaggct | cctagaagac | 1800 |
| tccaagggag | taaaagagct | gatgaaacaa | tggcaagacc | tccaaggtga | aattgaagct | 1860 |
| cacacagatg | tttatcacaa | cctggatgaa | aacagccaaa | aatcctgag | atccctggaa | 1920 |
| ggttccgatg | atgcagtcct | gttacaaaga | cgtttgata | acatgaactt | caagtggagt | 1980 |
| gaacttcgga | aaaagtctct | caacattagg | tcccat ttgg | aagccagttc | tgaccagtgg | 2040 |
| aagcgtctgc | acctttctct | gcaggaactt | ctggtgtggc | tacagctgaa | agatgatgaa | 2100 |
| ttaagccggc | aggcacctat | tggaggcgac | tttccagcag | ttcagaagca | gaacgatgta | 2160 |
| catagggcct | tcaagaggga | attgaaaact | aaagaacctg | taatcatgag | tactcttgag | 2220 |
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| aaaatagatg | agacccttga | aagactccag | gaacttcaag | aggccacgga | tgagctggac | 2460 |
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| attgactctc | tccaagatca | cctcgagaaa | gtcaaggcac | ttcgaggaga | aattgctgct | 2580 |
| ctgaaagaga | acgtgagcca | cgtcaatgac | cttgctcgcc | agcttaccac | tttgggcatt | 2640 |
| cagctctcac | cgtataacct | cagcactctg | gaagacctga | acaccagatg | gaagcttctg | 2700 |
| caggtggccg | tcgaggaccg | agtcaggcag | ctgcatgaag | cccacaggga | ctttggtcca | 2760 |
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| aacaaagtgc | cctactatat | caaccacgag | actcaaacaa | cttgctggga | ccatcccaaa | 2880 |
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| actgccatga | aactccgaag | actgcagaag | gccctttgct | tggatctctt | gagcctgtca | 3000 |
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| ttgggtgaag | ttgcatcctt | tgggggcagt | aacattgagc | caagtgtccg | gagctgcttc | 3420 |
| caatttgcta | ataataagcc | agagatcgaa | gcggccctct | tcctagactg | gatgagactg | 3480 |
| gaaccccagt | ccatggtgtg | gctgcccgtc | ctgcacagag | tggctgctgc | agaaactgcc | 3540 |
| aagcatcagg | ccaaatgtaa | catctgcaaa | gagtgtccaa | tcattggatt | caggtacagg | 3600 |
| agtctaaagc | actttaatta | tgacatctgc | caaagctgct | ttttttctgg | tcgagttgca | 3660 |
| aaaggccata | aatgcacta | tcccatgggtg | gaatattgca | ctccgactac | atcaggagaa | 3720 |
| gatgttcgag | actttgccaa | ggtactaaaa | aacaaatttc | gaaccaaag | gtattttgcg | 3780 |
| aagcatcccc | gaatgggcta | cctgccagtg | cagactgtct | tagaggggga | caacatggaa | 3840 |
| actcccagaca | caatgtag | | | | | 3858 |

<210> 10
 <211> 3531
 <212> DNA
 <213> Homo sapiens

<400> 10

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| aagaaaacat | tcacaaaatg | ggtaaataca | caattttcta | agtttgggaa | gcagcatatt | 120 |
| gagaacctct | tcagtacact | acaggatggg | aggcgccctc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
| aacaaggcac | tgcgggtttt | gcagaacaat | aatggttgatt | tagtgaatat | tggaagtact | 300 |
| gacatcgtag | atggaaatca | taaactgact | cttgggttga | tttggaatat | aatcctccac | 360 |
| tggcagggtca | aaaatgtaat | gaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacaggt | taatgtaatc | 480 |
| aacttcacca | ccagctgggtc | tgatggcctg | gctttgaatg | ctctcatcca | tagtcatagg | 540 |
| ccagacctat | ttgactggaa | tagtgtggtt | tgccagcagt | cagccacaca | acgactggaa | 600 |
| catgcattca | acatcgccag | atatcaatta | ggcatagaga | aactactcga | tcctgaagat | 660 |
| gttgatacca | cctatccaga | taagaagtcc | atcttaatgt | acatcacatc | actcttccaa | 720 |
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| cctaaagtga | ctaaagaaga | acattttcag | ttacatcatc | aatgcacta | ttctcaacag | 840 |
| atcacggtca | gtctagcaca | gggatatgag | agaacttctt | cccctaagcc | tcgattcaag | 900 |
| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
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| gctgaggaca | cattgcaagc | acaaggagag | atthtctaatg | atgtggaagt | ggtgaaagac | 1140 |
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| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 1260 |
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| caatggcaag | acctccaagg | tgaaattgaa | gctcacacag | atgtttatca | caacctggat | 1560 |
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| aggtcccatt | tggaagccag | ttctgaccag | tggaagcgct | tgacaccttc | tctgcaggaa | 1740 |
| cttctggtgt | ggctacagct | gaaagatgat | gaattaagcc | ggcaggcacc | tattggaggc | 1800 |
| gactttccag | cagttcagaa | gcagaacgat | gtacataggg | ccttcaagag | ggaattgaaa | 1860 |
| actaaagaac | ctgtaatcat | gagtactctt | gagactgtac | gaatatttct | gacagagcag | 1920 |
| cctttggaag | gactagagaa | actctaccag | gagcccagag | agctgcctcc | tgaggagaga | 1980 |
| gcccagaatg | tcactcggct | tctacgaaag | caggctgagg | aggtcaatac | tgagtgggaa | 2040 |
| aaattgaacc | tgactccgc | tgactggcag | agaaaaatag | atgagaccct | tgaaagactc | 2100 |
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| aacctcaagc | aaaatgacca | gcccattggat | atcctgcaga | ttattaattg | tttgaccact | 2760 |
| atttatgacc | gcctggagca | agagcacaac | aatttggtca | acgtccctct | ctgcgtggat | 2820 |
| atgtgtctga | actggctgct | gaatgtttat | gatacgggac | gaacagggag | gatccgtgtc | 2880 |
| ctgtctttta | aaactggcat | catttcctctg | tgtaaagcac | atthtggaga | caagtacaga | 2940 |
| taccttttca | agcaagtggc | aagttcaaca | ggatthtgtg | accagcgag | gctgggcctc | 3000 |
| cttctgcatg | attctatcca | aattccaaga | cagttgggtg | aagttgcatc | ctthtgggggc | 3060 |

| | | | | | | |
|------------|------------|-------------|-------------|------------|-------------|------|
| agtaacattg | agccaagtgt | ccggagctgc | ttccaatttg | ctaataataa | gccagagatc | 3120 |
| gaagcggccc | tcttcctaga | ctggatgaga | ctggaacccc | agtccatggg | gtggctgccc | 3180 |
| gtcctgcaca | gagtggctgc | tgcagaaact | gccaaagcatc | aggccaaatg | taacatctgc | 3240 |
| aaagagtgtc | caatcattgg | attcagggtac | aggagtctaa | agcactttaa | ttatgacatc | 3300 |
| tgccaaagct | gctttttttc | tggctcgagtt | gcaaaaggcc | ataaaatgca | ctatcccatg | 3360 |
| gtggaatatt | gcactccgac | tacatcagga | gaagatgttc | gagactttgc | caagggtacta | 3420 |
| aaaaacaaat | ttcgaaccaa | aagggtatttt | gcgaagcatc | cccgaatggg | ctacctgcca | 3480 |
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<210> 11

<211> 1340

<212> DNA

<213> Homo sapiens

<400> 11

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| ttcacaaaat | gggtaaatgc | acaattttct | aagtttggga | agcagcatat | tgagaacctc | 120 |
| ttcagtgacc | tacaggatgg | gaggcgcttc | ctagacctcc | tcgaaggcct | gacagggcaa | 180 |
| aaactgccaa | aagaaaaagg | atccacaaga | gttcatgccc | tgaacaatgt | caacaaggca | 240 |
| ctgcggggtt | tgcagaacaa | taatgttgat | ttagtgaata | ttggaagtac | tgacatcgta | 300 |
| gatggaaatc | ataaactgac | tcttggtttg | atttgggaata | taatcctcca | ctggcagggtc | 360 |
| aaaaatgtaa | tgaaaaatat | catggctgga | ttgcaaccaa | ccaacagtga | aaagattctc | 420 |
| ctgagctggg | tccgacaatc | aactcgtaat | tatccacagg | ttaatgtaat | caacttcacc | 480 |
| accagctggg | ctgatggcct | ggctttgaat | gctctcatcc | atagtcatag | gccagacctc | 540 |
| tttgactgga | atagtgtggg | ttgccagcag | tcagccacac | aacgactgga | acatgcattc | 600 |
| aacatcgcca | gatatacaat | aggcatagag | aaactactcg | atcctgaaga | tggttgatacc | 660 |
| acctatccag | ataagaagtc | catcttaatg | tacatcacat | cactcttcca | agttttgcct | 720 |
| caacaagtga | gcattgaagc | catccaggaa | gtggaaatgt | tgccaaggcc | acctaaagtg | 780 |
| actaaagaag | aacattttca | gttacatcat | caaatgcact | attctcaaca | gatcacgggc | 840 |
| agtctagcac | agggatatga | gagaacttct | tcccctaagc | ctcgattcaa | gagctatgcc | 900 |
| tacacacagg | ctgcttatgt | caccacctct | gaccctacac | ggagcccatt | tccttcacag | 960 |
| catttggaag | ctcctgaaga | caagtcattt | ggcagttcat | tgatggagag | tgaagtaaac | 1020 |
| ctggaccgtt | atcaaacagc | tttagaagaa | gtattatcgt | ggcttctttc | tgctgaggac | 1080 |
| acattgcaag | cacaaggaga | gattttcta | gatgtggaag | tggtgaaaga | ccagtttcat | 1140 |
| actcatgagg | ggtacatgat | ggatttgaca | gcccacagc | gccgggttgg | taatattcta | 1200 |
| caattgggaa | gtaagctgat | tggaaacagga | aaattatcag | aagatgaaga | aactgaagta | 1260 |
| caagagcaga | tgaatctcct | aaattcaaga | tgggaatgcc | tcagggtagc | tagcatggaa | 1320 |
| aaacaaagca | atttacatag | | | | | 1340 |

<210> 12

<211> 3510

<212> DNA

<213> Homo sapiens

<400> 12

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| aagaaaacat | tcacaaaatg | ggtaaagtca | caattttcta | agtttgggaa | gcagcatatt | 120 |
| gagaacctct | tcagtgcact | acaggatggg | aggcgcttcc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
| aacaaggcac | tgcgggtttt | gcagaacaat | aatgttgatt | tagtgaatat | tggaagtact | 300 |
| gacatcgtag | atggaaatca | taaactgact | cttggtttga | tttgggaatat | aatcctccac | 360 |
| tggcagggtc | aaaatgtaat | gaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacagg | taatgtaatc | 480 |
| aacttcacca | ccagctgggt | tgatggcctg | gctttgaaat | ctctcatcca | tagtcatagg | 540 |
| ccagacctat | ttgactggaa | tagtgtgggt | tgccagcag | cagccacaca | acgactggaa | 600 |
| catgcattca | acatcgccag | atatcaatta | ggcatagaga | aactactcga | tcctgaagat | 660 |

| | | | | | | |
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| gttgatacca | cctatccaga | taagaagtcc | atcttaaatgt | acatcacatc | actcttccaa | 720 |
| gttttgctc | aacaagtgag | cattgaagcc | atccaggaag | tggaaatgtt | gccaaggcca | 780 |
| cctaaagtga | ctaaagaaga | acattttcag | ttacatcatc | aatgcacta | ttctcaacag | 840 |
| atcacggtca | gtctagcaca | gggatatgag | agaacttctt | cccctaagcc | tcgattcaag | 900 |
| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
| ccttcacagc | atttggaagc | tcctgaagac | aagtcatttg | gcagttcatt | gatggagagt | 1020 |
| gaagtaaacc | tggaccgtta | tcaaacagct | ttagaagaag | tattatcgtg | gcttctttct | 1080 |
| gctgaggaca | cattgcaagc | acaaggagag | atttctaata | atgtggaagt | ggtgaaagac | 1140 |
| cagtttcata | ctcatgaggg | gtacatgatg | gatttgacag | cccatcaggg | ccgggttggt | 1200 |
| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 1260 |
| actgaagtac | aagagcagat | gaatctccta | aattcaagat | gggaatgcct | cagggtagct | 1320 |
| agcatggaaa | aacaaagcaa | tttacaatga | gttttaaatg | atctccagaa | tcagaaactg | 1380 |
| aaagagttga | atgactggct | aacaaaaaca | gaagaaagaa | caaggaaaat | ggaggaagag | 1440 |
| cctcttggtg | ctgatcttga | agacctaaaa | cgccaagtac | aacaacataa | ggtgcttcaa | 1500 |
| gaagatctag | aacaagaaca | agtcagggtc | aattctctca | ctcacatggg | ggtggtagtt | 1560 |
| gatgaatcta | gtggagatca | cgcaactgct | gctttggaag | aacaacttaa | ggtattggga | 1620 |
| gatcgatggg | caaacatctg | tagatggaca | gaagaccgct | gggttctttt | acaagacagt | 1680 |
| tctgaccagt | ggaagcgtct | gcacctttct | ctgcaggaac | ttctgggtgtg | gctacagctg | 1740 |
| aaagatgatg | aattaagccg | gcaggcacct | attggaggcg | actttccagc | agttcagaag | 1800 |
| cagaacgatg | tacatagggc | cttcaagagg | gaattgaaaa | ctaaagaacc | tgtaatcatg | 1860 |
| agtactcttg | agactgtacg | aatattttctg | acagagcagc | ctttggaagg | actagagaaa | 1920 |
| ctctaccagg | agcccagaga | gctgcctcct | gaggagagag | cccagaatgt | cactcggctt | 1980 |
| ctacgaaagc | aggctgagga | ggtcaatact | gagtgggaaa | aattgaacct | gcactccgct | 2040 |
| gactggcaga | gaaaaataga | tgagaccctt | gaaagactcc | aggaacttca | agaggccacg | 2100 |
| gatgagctgg | acctcaagct | gcgccaagct | gaggtgatca | agggatcctg | gcagcccgtg | 2160 |
| ggcgatctcc | tcattgactc | tctccaagat | cacctcgaga | aagtcaaggc | acttcgagga | 2220 |
| gaaattgocg | ctctgaaaga | gaacgtgagc | cacgtcaatg | accttgctcg | ccagcttacc | 2280 |
| actttgggca | ttcagctctc | accgtataac | ctcagcactc | tgggaagacct | gaacaccaga | 2340 |
| tggaaagcttc | tgcagggtggc | cgtcgaggac | cgagtcaggc | agctgcatga | agcccacagg | 2400 |
| gactttgggtc | cagcatctca | gcactttctt | tccacgtctg | tccaggggtcc | ctgggagaga | 2460 |
| gccatctcgc | caaacaaagt | gccctactat | atcaaccacg | agactcaaac | aacttgctgg | 2520 |
| gaccatccca | aatgacaga | gctctaccag | tcttttagctg | acctgaataa | tgtcagattc | 2580 |
| tcagcttata | ggactgccat | gaaactccga | agactgcaga | aggccctttg | cttggatctc | 2640 |
| ttgagcctgt | cagctgcatg | tgatgccttg | gaccagcaca | acctcaagca | aatgaccag | 2700 |
| cccatggata | tcctgcagat | tattaattgt | ttgaccacta | tttatgaccg | cctggagcaa | 2760 |
| gagcacaaca | atttgggtcaa | cgtccctctc | tgcgtggata | tgtgtctgaa | ctggctgctg | 2820 |
| aatgtttatg | atacgggacg | aacagggagg | atccgtgtcc | tgtcttttaa | aactggcatc | 2880 |
| atttccctgt | gtaaagcaca | tttgggaagac | aagtacagat | accttttcaa | gcaagtggca | 2940 |
| agttcaacag | gattttgtga | ccagcgcagg | ctgggcctcc | ttctgcatga | ttctatccaa | 3000 |
| attccaagac | agttgggtga | agttgcatcc | tttgggggca | gtaacattga | gccaagtgtc | 3060 |
| cggagctgct | tccaatttgc | taataataag | ccagagatcg | aagcggccct | cttcctagac | 3120 |
| tggatgagac | tggaaaccca | gtccatgggtg | tggctgcccg | tcctgcacag | agtggctgct | 3180 |
| gcagaaactg | ccaagcatca | ggccaaatgt | aacatctgca | aagagtgtcc | aatcattgga | 3240 |
| ttcagggtaca | ggagtctaaa | gcactttaat | tatgacatct | gccaagctg | ctttttttct | 3300 |
| ggtcgagttg | caaaaggcca | taaaatgcac | tatcccatgg | tggaaatattg | cactccgact | 3360 |
| acatcaggag | aagatgttcg | agactttgcc | aaggtactaa | aaaacaaatt | tcgaaccaa | 3420 |
| aggtattttg | cgaagcatcc | ccgaatgggc | tacctgccag | tgcagactgt | cttagagggg | 3480 |
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<210> 13

<211> 1821

<212> DNA

<213> Homo sapiens

<400> 13

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gctgaaagat gatgaattaa gccggcaggc acctattgga ggcgactttc cagcagttca 120

| | | | | | | |
|-------------|-------------|------------|-------------|------------|-------------|------|
| gaagcagaac | gatgtacata | gggccttcaa | gaggggaattg | aaaactaaag | aacctgtaat | 180 |
| catgagtact | cttgagactg | tacgaatatt | tctgacagag | cagccttttg | aaggactaga | 240 |
| gaaactctac | caggagccca | gagagctgcc | tcctgaggag | agagcccaga | atgtcactcg | 300 |
| gcttctacga | aagcaggctg | aggaggtcaa | tactgagtgg | gaaaaattga | acctgcactc | 360 |
| cgctgactgg | cagagaaaaa | tagatgagac | ccttgaaaga | ctccaggaac | ttcaagagggc | 420 |
| cacggatgag | ctggacctca | agctgcgcca | agctgaggtg | atcaagggat | cctggcagcc | 480 |
| cgtgggcat | ctcctcattg | actctctcca | agatcacctc | gagaaagtca | aggcacttcg | 540 |
| aggagaaatt | gcgcctctga | aagagaacgt | gagccacgtc | aatgaccttg | ctcgccagct | 600 |
| taccactttg | ggcattcagc | tctcaccgta | taacctcagc | actctggaag | acctgaacac | 660 |
| cagatggaag | cttctgcagg | tggccgtcga | ggaccgagtc | aggcagctgc | atgaagccca | 720 |
| cagggacttt | ggtccagcat | ctcagcactt | tctttccacg | tctgtccagg | gtccctggga | 780 |
| gagagccatc | tcgccaaca | aagtgcccta | ctatatcaac | cacgagactc | aaacaacttg | 840 |
| ctgggaccat | cccaaaatga | cagagctcta | ccagtcttta | gctgacctga | ataatgtcag | 900 |
| attctcagct | tataggactg | ccatgaaact | ccgaagactg | cagaaggccc | tttgcttgga | 960 |
| tctcttgagc | ctgtcagctg | catgtgatgc | cttggaccag | cacaacctca | agcaaaatga | 1020 |
| ccagcccatg | gatatcctgc | agattattaa | ttgtttgacc | actatttatg | accgcctgga | 1080 |
| gcaagagcac | aacaatttgg | tcaacgtccc | tctctgcgtg | gatatgtgtc | tgaactggct | 1140 |
| gctgaatgtt | tatgatacgg | gacgaacagg | gaggatccgt | gtcctgtctt | ttaaaactgg | 1200 |
| catcatttcc | ctgtgtaaag | cacatttgga | agacaagtac | agataccttt | tcaagcaagt | 1260 |
| ggcaagttca | acaggatttt | gtgaccagcg | caggctgggc | ctccttctgc | atgattctat | 1320 |
| ccaaattcca | agacagttgg | gtgaagttgc | atcctttggg | ggcagtaaca | ttgagccaag | 1380 |
| tgctccggagc | tgcttccaat | ttgctaataa | taagccagag | atcgaagcgg | ccctcttcc | 1440 |
| agactggatg | agactggaac | cccagtcct | gggtgtggctg | cccgtcctgc | acagagtggc | 1500 |
| tgctgcagaa | actgccaagc | atcaggccaa | atgtaacatc | tgcaaagagt | gtccaatcat | 1560 |
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| gactacatca | ggagaagatg | ttcgagactt | tgccaaggta | ctaaaaaaca | aatttcgaac | 1740 |
| caaaagggtat | tttgcaagc | atccccgaat | gggctacctg | ccagtgcaga | ctgtcttaga | 1800 |
| gggggacaac | atggaaactc | c | | | | 1821 |

<210> 14

<211> 3446

<212> DNA

<213> Homo sapiens

<400> 14

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| aagaaaacat | tcacaaaatg | ggtaaatgca | caattttcta | agtttgggaa | gcagcatatt | 120 |
| gagaacctct | tcagtgcctt | acaggatggg | aggcgctcc | tagacctcct | cgaaggcctg | 180 |
| acagggcaaa | aactgccaaa | agaaaaagga | tccacaagag | ttcatgccct | gaacaatgtc | 240 |
| aacaaggcac | tgcggtttt | gcagaacaat | aatgttgatt | tagtgaatat | tggaagtact | 300 |
| gacatcgtag | atggaaatca | taaactgact | cttggtttga | tttggaatat | aatcctccac | 360 |
| tggcagggtca | aaaatgtaat | gaaaaatatc | atggctggat | tgcaacaaac | caacagtga | 420 |
| aagattctcc | tgagctgggt | ccgacaatca | actcgtaatt | atccacaggt | taatgtaatc | 480 |
| aacttcacca | ccagctgggtc | tgatggcctg | gctttgaatg | ctctcatcca | tagtcatagg | 540 |
| ccagacctat | ttgactggaa | tagtgtggtt | tgccagcagt | cagccacaca | acgactggaa | 600 |
| catgcattca | acatcgccag | atatcaatta | ggcatagaga | aactactcga | tcctgaagat | 660 |
| gttgatacca | cctatccaga | taagaagtcc | atcttaatgt | acatcacatc | actcttccaa | 720 |
| gttttgcttc | aacaagtga | cattgaagcc | atccaggaag | tggaaatgtt | gccaaggcca | 780 |
| cctaaagtga | ctaaagaaga | acattttcag | ttacatcatc | aaatgcacta | ttctcaacag | 840 |
| atcacggtea | gtctagcaca | gggatatgag | agaacttctt | cccctaagcc | tcgattcaag | 900 |
| agctatgcct | acacacaggc | tgcttatgtc | accacctctg | accctacacg | gagcccattt | 960 |
| ccttcacagc | atttggaagc | tcctgaagac | aagtcatttg | gcagttcatt | gatggagagt | 1020 |
| gaagtaaacc | tggaccgtta | tcaaacagct | ttagaagaag | tattatcgtg | gcttctttct | 1080 |
| gctgaggaca | cattgcaagc | acaaggagag | atttctaattg | atgtggaagt | ggtgaaagac | 1140 |
| cagtttcata | ctcatgaggg | gtacatgatg | gatttgacag | cccatcaggg | ccgggttggt | 1200 |
| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 1260 |

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<210> 15

<211> 1434

<212> DNA

<213> Homo sapiens

<400> 15

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<220>

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<223> Description of Artificial Sequence: Primer

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<213> Homo sapiens

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| gccaactcca | tcactagggg | ttcctagatc | agcttgcatg | cccactacgg | gtctaggctg | 180 |
| cccatgtaag | gaggcaaggc | ctggggacac | ccgagatgcc | tggttataat | taaccacagc | 240 |
| atgtggctgc | ccccccccc | ccaacacctg | ctgcctgagc | ctcaccccca | ccccgggtgc | 300 |
| tgggtcttag | gctctgtaca | ccatggagga | gaagctcgct | ctaaaaataa | ccctgtccct | 360 |
| ggtggatccc | ctgcatgccc | aatcaaggct | gtgggggact | gagggcaggc | tgtaacaggc | 420 |
| ttgggggcca | gggcttatac | gtgcctggga | ctcccaaagt | attactgttc | catgttcccg | 480 |
| gcgaagggcc | agctgtcccc | cgccagctag | actcagcact | tagtttagga | accagtgagc | 540 |
| aagtcagccc | ttgggggcagc | ccatacaagg | ccatggggct | gggcaagctg | cacgcctggg | 600 |
| tccgggggtg | gcacgggtgc | cgggcaacga | gctgaaagct | catctgctct | caggggcccc | 660 |
| tccctgggga | cagccccctc | tggctagtca | caccctgtag | gctcctctat | ataaccacag | 720 |
| ggcacagggg | ctgccccccg | gtcactcgag | aggcctaata | aagagctcag | atgcatcgat | 780 |
| cagagtgtgt | tggttttttg | tgtgagatct | aggaaccctt | agtgatggag | ttggccactc | 840 |
| cctctctgcg | cgctcgctcg | ctcactgagg | ccgcccgggc | aaagcccggg | cgtcgggcga | 900 |
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| cgacgcccgg | gctttgcccg | ggcggcctca | gtgagcgagc | gagcgcgcag | agaggggagt | 120 |
| gccaactcca | tcactagggg | ttcctagatc | tgaattcgag | cttgcatgcc | cactacgggt | 180 |
| ctaggctgcc | catgtaagga | ggcaaggcct | ggggacaccc | gagatgcctg | gttataatta | 240 |
| acccagacat | gtggctgccc | ccccccccc | aacacctgct | gcctgagcct | cacccccacc | 300 |
| ccggtgcctg | ggtcttaggc | tctgtacacc | atggaggaga | agctcgctct | aaaaataacc | 360 |
| ctgtccctgg | tggatcccct | gcatgcccga | tcaaggctgt | gggggactga | gggcaggctg | 420 |
| taacaggctt | gggggcccag | gcttatacgt | gcctgggact | cccaaagtat | tactgttcca | 480 |
| tgttcccggc | gaagggccag | ctgtcccccg | ccagctagac | tcagcactta | gtttaggaac | 540 |
| cagtgaagca | gtcagccctt | ggggcagccc | atacaaggcc | atggggctgg | gcaagctgca | 600 |
| cgcttgggtc | cggggtgggc | acggtgcccc | ggcaacgagc | tgaaagctca | tctgctctca | 660 |

| | | | | | | |
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| aaccagggg | cacaggggct | gccccgggt | cactcgaatt | ttcaccatgg | tttggtggga | 780 |
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| aatgcacaa | ttttctaagt | ttgggaagca | gcatattgag | aacctcttca | gtgacctaca | 900 |
| ggatgggagg | cgctcctag | acctcctcga | aggcctgaca | gggcaaaaac | tgccaaaaga | 960 |
| aaaaggatcc | acaagagttc | atgccctgaa | caatgtcaac | aaggcactgc | gggttttgca | 1020 |
| gaacaataat | gttgatttag | tgaatattgg | aagtactgac | atcgtagatg | gaaatcataa | 1080 |
| actgactctt | ggtttgattt | ggaatataat | cctccactgg | caggtcaaaa | atgtaatgaa | 1140 |
| aatatcatg | gctggattgc | aacaaaccaa | cagtgaagag | attctcctga | gctgggtccg | 1200 |
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| tgaagacaag | tcatttggca | gttcattgat | ggagagtga | gtaaacctgg | accgttatca | 1800 |
| aacagcttta | gaagaagtat | tatcgtggct | tctttctgct | gaggacacat | tgcaagcaca | 1860 |
| aggagagatt | tctaattgat | tgggaagtgg | gaaagaccag | tttcatactc | atgaggggta | 1920 |
| catgatggat | ttgacagccc | atcagggccg | ggttggtaat | attctacaat | tggaaggtaa | 1980 |
| gctgattgga | acaggaaaat | tatcagaaga | tgaagaaact | gaagtacaag | agcagatgaa | 2040 |
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| gtgttggttt | tttgtgtgag | atctaggaac | ccctagtgat | ggagttggcc | actccctctc | 5040 |
| tgcgcgctcg | ctcgctcact | gaggccgccc | gggcaaagcc | cgggcgtcgg | gcgacctttg | 5100 |
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| aggagagatt | tctaattgat | tgggaagtgg | gaaagaccag | tttcatactc | atgaggggta | 1920 |
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| | | | | | | |
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| agcacatttg | gaagacaagt | acagatacct | tttcaagcaa | gtggcaagtt | caacaggatt | 4200 |
| ttgtgaccag | cgcaggctgg | gcctccttct | gcatgattct | atccaaattc | caagacagtt | 4260 |
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<211> 4825

<212> DNA

<213> Homo sapiens

<400> 29

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| gccaactcca | tcactagggg | ttcctagatc | tgaattcgag | cttgcatgcc | cactacgggt | 180 |
| ctaggctgcc | catgtaagga | ggcaaggcct | ggggacaccc | gagatgcctg | gttataatta | 240 |
| accagacat | gtggctgccc | ccccccccc | aacacctgct | gcctgagcct | cacccccacc | 300 |
| ccggtgcctg | ggtcttaggc | tctgtacacc | atggaggaga | agctcgctct | aaaaataacc | 360 |
| ctgtccctgg | tggatccctt | gcatgcccac | tcaaggctgt | gggggactga | gggcaggctg | 420 |
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| ggggcccttc | cctgggggaca | gccccctcct | gctagtcaca | ccctgtaggc | tcctctatat | 720 |
| aaccagggg | cacagggggt | gcccccggg | cactcgaatt | ttcaccatgg | tttgggtggga | 780 |
| agaagtagag | gactgttatg | aaagagaaga | tgttcaaaa | aaaacattca | caaaatgggt | 840 |
| aatgcacaa | ttttctaagt | ttgggaagca | gcatattgag | aacctcttca | gtgacctaca | 900 |
| ggatgggagg | cgctccttag | acctcctcga | aggcctgaca | gggcaaaaac | tgccaaaaga | 960 |
| aaaaggatcc | acaagagttc | atgccctgaa | caatgtcaac | aaggcactgc | gggttttgca | 1020 |
| gaacaataat | gttgatttag | tgaatatagg | aagtactgac | atcgtagatg | gaaatcataa | 1080 |
| actgactctt | ggtttgat | ggaatataat | cctccactgg | caggtcaaaa | atgtaatgaa | 1140 |
| aatatcatg | gctggattgc | aacaaaccaa | cagtgaagag | attctcctga | gctgggtccg | 1200 |
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| gctgattgga | acaggaaaat | tatcagaaga | tgaagaaact | gaagtacaag | agcagatgaa | 2040 |
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| cctaaaacgc | caagtacaac | aacataaggt | gcttcaagaa | gatctagaac | aagaacaagt | 2280 |
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| | | | | | | |
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| ccggtgcctg | ggtcttaggc | tctgtacacc | atggaggaga | agctcgctct | aaaaataacc | 360 |
| ctgtccctgg | tggatccctt | gcatgcccaa | tcaaggctgt | gggggactga | gggcaggctg | 420 |
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| tgttcccggc | gaagggccag | ctgtcccccg | ccagctagac | tcagcactta | gtttaggaac | 540 |
| cagtgcgcaa | gtcagccctt | ggggcagccc | atacaaggcc | atggggctgg | gcaagctgca | 600 |
| cgctgggtc | cggggtgggc | acgggtgccc | ggcaacgagc | tgaaagctca | tctgctctca | 660 |
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| aaccagggg | cacaggggct | gcccccggtt | cactcgaatt | ttcaccatgg | tttgggtggga | 780 |
| agaagtagag | gactgttatg | aaagagaaga | tgttcaaaag | aaaacattca | caaaatgggt | 840 |
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| aacagcttta | gaagaagtat | tatcgtggct | tctttctgct | gaggacacat | tgcaagcaca | 1860 |
| aggagagatt | tctaattgatg | tggaagtgg | gaaagaccag | tttcatactc | atgaggggta | 1920 |
| catgatggat | ttgacagccc | atcagggccg | ggttggtaat | attctacaat | tggaagtaaa | 1980 |
| gctgattgga | acaggaaaat | tatcagaaga | tgaagaaact | gaagtacaag | agcagatgaa | 2040 |
| tctcctaaat | tcaagatggg | aatgcctcag | ggtagctagc | atggaaaaac | aaagcaattt | 2100 |
| acatagaact | catagattac | tgcaacagtt | ccccctggac | ctggaaaagt | ttcttgcttg | 2160 |
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<211> 4848

<212> DNA

<213> Homo sapiens

<400> 35

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| ccaactccat | cactaggggt | tcctagatct | gaattcggtg | cccgttacat | aacttacggt | 180 |
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| cattgacgtc | aatgggagtt | tgttttggca | ccaaaatcaa | cgggactttc | caaaatgtcg | 600 |

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| cagtttcata | ctcatgaggg | gtacatgatg | gatttgacag | cccatcaggg | ccgggttggt | 1980 |
| aatattctac | aattgggaag | taagctgatt | ggaacaggaa | aattatcaga | agatgaagaa | 2040 |
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| tcaccacctc | tgaccctaca | cggagcccat | ttccttcaca | gcatttggaa | gctcctgaag | 1980 |
| acaagtcatt | tggcagttca | ttgatggaga | gtgaagtaaa | cctggaccgt | tatcaaacag | 2040 |
| ctttagaaga | agtattatcg | tggcttcttt | ctgctgagga | cacattgcaa | gcacaaggag | 2100 |
| agattttctaa | tgatgtggaa | gtgggtgaaag | accagtttca | tactcatgag | gggtacatga | 2160 |
| tggatttgac | agcccatcag | ggccgggttg | gtaatatctt | acaattggga | agtaagctga | 2220 |

| | | | | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|------|
| ttggaacagg | aaaattatca | gaagatgaag | aaactgaagt | acaagagcag | atgaatctcc | 2280 |
| taaattcaag | atgggaatgc | ctcagggtag | ctagcatgga | aaaacaaagc | aatttacata | 2340 |
| gagttttaat | ggatctccag | aatcagaaac | tgaaagagtt | gaatgactgg | ctaacaaaaa | 2400 |
| cagaagaaag | aacaaggaaa | atggaggaag | agcctcttgg | acctgatctt | gaagacctaa | 2460 |
| aacgccaagt | acaacaacat | aaggtgcttc | aagaagatct | agaacaagaa | caagtcaggg | 2520 |
| tcaattctct | cactcacatg | gtggtggtag | ttgatgaatc | tagtggagat | cacgcaactg | 2580 |
| ctgctttgga | agaacaactt | aaggtattgg | gagatcgatg | ggcaaacatc | tgtagatgga | 2640 |
| cagaagaccg | ctgggttctt | ttacaagaca | ctcatagatt | actgcaacag | ttccccctgg | 2700 |
| acctggaaaa | gtttcttgcc | tggcttacag | aagctgaaac | aactgccaat | gtcctacagg | 2760 |
| atgctaccgg | taaggaaagg | ctcctagaag | actccaaggg | agtaaaagag | ctgatgaaac | 2820 |
| aatggcaaga | cctccaaggt | gaaattgaag | ctcacacaga | tgtttatcac | aacctggatg | 2880 |
| aaaacagcca | aaaaatcctg | agatccctgg | aaggttccga | tgatgcagtc | ctgttacaaa | 2940 |
| gacgtttgga | taacatgaac | ttcaagtgga | gtgaacttcg | gaaaaagtct | ctcaacatta | 3000 |
| ggtcccatth | ggaagccagt | tctgaccagt | ggaagcgtct | gcacctttct | ctgcaggaac | 3060 |
| ttctggtgtg | gctacagctg | aaagatgatg | aattaagccg | gcaggcacct | attggaggcg | 3120 |
| actttccagc | agttcagaag | cagaacgatg | tacatagggc | cttcaagagg | gaattgaaaa | 3180 |
| ctaaagaacc | tgtaatcatg | agtactcttg | agactgtacg | aatatthctg | acagagcagc | 3240 |
| ctttggaagg | actagagaaa | ctctaccagg | agcccagaga | gctgcctcct | gaggagagag | 3300 |
| cccagaatgt | cactcggctt | ctacgaaagc | aggctgagga | ggtcaatact | gagtgggaaa | 3360 |
| aattgaacct | gcactccgct | gactggcaga | gaaaaataga | tgagaccctt | gaaagactcc | 3420 |
| aggaacttca | agaggccacg | gatgagctgg | acctcaagct | gcgccaagct | gaggtgatca | 3480 |
| agggatcctg | gcagcccgtg | ggcgatctcc | tcatthgactc | tctccaagat | cacctcgaga | 3540 |
| aagtcaaggc | acttcgagga | gaaattgctc | ctctgaaaga | gaacgtgagc | cacgtcaatg | 3600 |
| accttgctcg | ccagcttacc | actttgggca | ttcagctctc | accgtataac | ctcagcactc | 3660 |
| tggaagacct | gaacaccaga | tggaagcttc | tgcaggtggc | cgtcgaggac | cgagtcaggc | 3720 |
| agctgcatga | agcccacagg | gactttggtc | cagcatctca | gcactthctt | tccacgtctg | 3780 |
| tccagggctc | ctgggagaga | gccatctcgc | caaacaaagt | gccctactat | atcaaccacg | 3840 |
| agactcaaac | aacttgctgg | gaccatccca | aaatgacaga | gctctaccag | tctthtagctg | 3900 |
| acctgaataa | tgtcagattc | tcagcttata | ggactgccat | gaaactccga | agactgcaga | 3960 |
| aggccctthg | cttggtatctc | ttgagcctgt | cagctgcatg | tgatgccttg | gaccagcaca | 4020 |
| acctcaagca | aaatgaccag | cccatggata | tcctgcatg | tattaatthg | ttgaccacta | 4080 |
| tttatgaccg | cctggagcaa | gagcacaaca | atthggtcaa | cgtccctctc | tgcgtggata | 4140 |
| tgtgtctgaa | ctggctgctg | aatgthtatg | atacgggacg | aacagggagg | atccgtgtcc | 4200 |
| tgtctthtaa | aactggcatc | atthccctgt | gtaaagcaca | thtggaagac | aagtacagat | 4260 |
| acctthtcaa | gcaagtggca | agthtcaacag | gattthtgtga | ccagcgcagg | ctgggcctcc | 4320 |
| ttctgcatga | ttctatccaa | attccaagac | agthgggtga | agthgcatcc | thtggggggca | 4380 |
| gtaacattga | gccaaagtgtc | cggagctgct | tccaatthtg | taataataag | ccagagatcg | 4440 |
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| tcctgcacag | agtggctgct | gcagaaactg | ccaagcatca | ggccaaatgt | aacatctgca | 4560 |
| aagagtgtcc | aatcattgga | ttcaggtaca | ggagtctaaa | gcactthtaat | tatgacatct | 4620 |
| gccaaagctg | ctthththct | ggtcgagthg | caaaaggcca | taaaatgcac | tatcccatgg | 4680 |
| tggaatatthg | cactccgact | acatcaggag | aagatgthctg | agactthtggc | aaggtactaa | 4740 |
| aaaacaaatt | tcgaacccaaa | aggtatththg | cgaagcatcc | ccgaatgggc | tacctgccag | 4800 |
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| taataaagag | ctcagatgca | tcgatcagag | tgtgttggtt | ththtgtgtga | gatctaggaa | 4920 |
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| cgcagagagg | gagthggccaa | | | | | 5060 |